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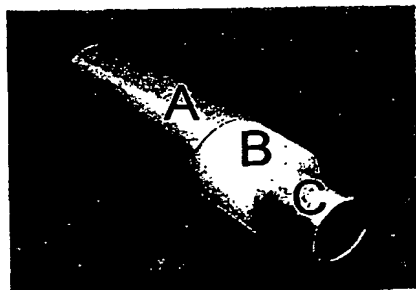
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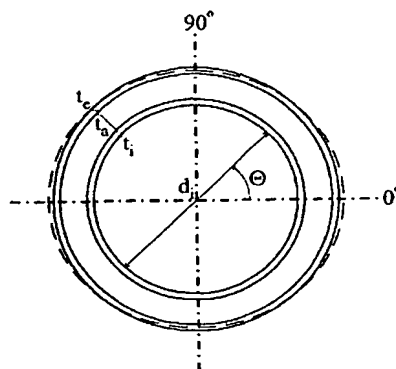
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(54) Title: SANDWICH PIPES FOR ULTRA-DEEP WATERS



(a)



(b)

(57) Abstract: This invention  
comprises a sandwich pipe, which  
consists of a tubular rigid system with  
three superposed layers (A, B, C),  
thermal and mechanical functions,  
to be used for the transportation of  
warmed hydrocarbons or general  
fluids in ultra-deep waters.

$D_i$ (mm)	$t_i$ (mm)	$\sigma_m$ (MPa)	$t_r$ (mm)	$\sigma_{\alpha}$ (MPa)	$t_a$ (mm)	$P_{\infty}$ (Mpa)
45.91	1.62	199.79	1.62	200.93	11.29	43.35
47.10	1.63	195.20	1.65	192.10	11.13	34.09
47.40	1.68	180.71	1.47	141.57	4.23	10.98
47.37	1.67	180.71	1.47	141.57	4.30	12.11
46.28	1.68	186.82	1.62	206.52	11.26	37.64
46.52	1.62	194.37	1.61	206.52	11.10	31.14
46.54	1.70	186.82	1.46	141.57	4.62	20.31
46.65	1.69	186.82	1.49	160.37	4.69	17.13

Table 1

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